

REMARKS

Claims 1-4, 6 and 13-20 are pending. Claim 2 is currently canceled. Claims 1 and 6 are currently amended. The amendments to claims 1 and 6 find support, for example, in originally filed (and currently canceled) claim 2; p. 6, line 22 to p. 7, line 2; and p. 8, line 1 of the originally filed application. Reconsideration of the application as amended is respectfully requested.

§ 103 Rejections

Claims 1-4, 6, and 13-20 are rejected under 35 USC § 103(a) as being unpatentable over O'Brien et al. (U.S. Patent No. 6,915,178) in view of Duret et al. (U.S. Patent No. 4,663,720). Specifically, the Examiner asserts that O'Brien provides the majority of the limitations of claims 1 and 6, while Duret supplies the elements related to a control surface. The Applicants respectfully disagree and contend that neither O'Brien nor Duret teaches or suggests each of the elements of independent claims 1 and 6.

For example, both claims 1 and 6 recite, "generating control data from said input data, said control data representing a control surface which meets the stability requirements," "generating design data from said input data and separately from the control data which represent the three-dimensional shape of the prosthesis," and "displaying the shape of the prosthesis together with the control surface on a monitor." The control data and design data recited above are two sets of data both generated "from said input data," but generated "separately." The two sets of data represent "a control surface" and "the shape of the prosthesis," respectively. The "shape of the prosthesis" and "control surface" are displayed "together." The Examiner relies primarily on O'Brien for these limitations (referring to col. 4, lines 14-47, col. 2, lines 54-58. col. 2, lines 58-62, and generally, col. 2, line 44 to col. 3, line 11). The Examiner also relies on Duret to supplement his argument (see col. 7, line 64 to col. 8, line 36).

None of the portions of O'Brien or Duret cited by the Examiner disclose these limitations. Specifically, the Examiner notes that a "3D digital data file created by O'Brien [] takes into parameters such as die spacers, minimum thickness requirement of the prosthesis, contact points, grooves, cusp overlays, marginal ridges etc." (paragraph 3.1 of Office Action

dated Dec. 8, 2009). However, O'Brien never discloses "displaying the shape of the prosthesis together with the control surface on a monitor" as recited by claims 1 and 6. O'Brien appears to only display a single 3D digital data file. Duret also does not teach or suggest these limitations.

Additionally, both of independent claims 1 and 6 recite, "providing stability requirements" and "wherein the stability requirements include a minimum required thickness." While the Examiner points to col. 4, lines 14-47 of O'Brien and col. 7, line 64 – col. 8, line 14 of Duret for these limitations, the Applicants respectfully respond that neither reference teaches or suggests these limitations. For instance, while O'Brien mentions a "minimum thickness of the prosthesis" (col. 4, lines 45-46), there is no indication that such a minimum thickness is tied to stability requirements, as recited by claims 1 and 6 of the present application ("wherein the stability requirements include a minimum *required* thickness of the prosthesis"). As described by the specification, the "minimum *required* thickness" ensures that the prosthesis walls are thick enough to be capable of withstanding the loads from milling work, when the prosthesis is being created, and chewing, after the prosthesis is mounted to the tooth stump (p. 2, line 17 – p. 3, line 3). In contrast, O'Brien seems to suggest that the user can change the minimum thickness to any value without regard to stability requirements. The cited portion of Duret mentions "thickness of the cement film which will hold the prosthesis" (col. 7, lines 2-3), but makes no disclosure related to a "minimum required thickness of the prosthesis." Thus, Applicants respectfully maintain that O'Brien does not disclose the stability requirement or minimum required thickness as claimed by the present application.

Claims 1 and 6 also recite, "generating control data from said input data, said control data representing a control surface which meets the stability requirements" and "the displayed control surface provides *a visual representation of the minimum required thickness.*" While the Examiner suggests that these limitations are disclosed by O'Brien and Duret, the Applicants again respectfully contend that these limitations are not disclosed. In contrast to the above quoted limitations, the Examiner refers to the "3D digital data file created by O'Brien" and the parameters listed in col. 2, lines 44-47. These parameters are only displayed in the context of "an image 14 of crown 50a to be attached to the stump 32." O'Brien mentions displaying the image of the prosthesis, but does not disclose a control surface in which "the *displayed control surface* provides a visual representation of the minimum required thickness." The displayed

image of O'Brien can have any desired thickness as modified by the user (col. 2, lines 44-47) and does not teach or suggest the limitations of claims 1 and 6. Further, Duret does not disclose these limitations. The portions of Duret cited by the Examiner (fig. 7 and col. 7, line 64 – col. 8, line 36) refer to “a model of the prosthesis” (col. 8, lines 11-12), and do not disclose a “*displayed control surface*” wherein the control surface “provides a visual representation of the minimum required thickness” as claimed in the present application. For at least the reasons above, the Applicants respectfully contend that claims 1 and 6 were nonobvious at the time of invention.

Further, claims 1 and 6 both recite, “the design data are modified by a user based on a *visual comparison* of the displayed design data and the displayed control surface in order to meet the stability requirements.” While the Examiner cites O'Brien for this limitation (Fig. 2-4, col. 4 lines 14-47 and col. 2, line 44 to col. 3, line 11), none of these portions of O'Brien teach or suggest a “visual comparison of the displayed design data and the displayed control surface.” O'Brien discusses creating “three dimensional digital data substantially corresponding to the dental prosthesis to be manufactured,” (col. 2, lines 48-52). While this “image is modified so that the modified image displayed on the monitor screen substantially corresponds to the dental prosthesis to be manufactured” (col. 2, lines 58-62), O'Brien's displayed image does not allow a user to modify design data based on a “visual comparison of the displayed design data and the displayed control surface in order to meet the stability requirements.” Duret also does not teach or suggest this limitation.

Claims 3-4 and 13-18 each add additional features to claim 1. Claims 19-20 each add additional features to claim 6. Claims 3-4 and 13-18 are patentable for at least the reasons given above for their base claim 1. Claims 19-20 are also patentable for at least the reasons given above for their base claim 6.

In view of the above, it is respectfully submitted that the application is in condition for allowance. Examination and reconsideration of the application as amended is requested.

Respectfully submitted,

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